

## STATEMENT OF CONSIDERATIONS

### REQUEST BY SIEMENS WESTINGHOUSE POWER CORPORATION FOR AN ADVANCE WAIVER OF DOMESTIC AND FOREIGN INVENTION RIGHTS UNDER DOE COOPERATIVE AGREEMENT No. DE-FC26-01NT41232 W(A)-02-020, CH-1103

The Petitioner, Siemens Westinghouse Power Corporation (Siemens), was awarded this cooperative agreement for the performance of work entitled, "On-Line Thermal Barrier Coating Monitor for Real-Time Failure Protection and Life Maximization." The purpose of the cooperative agreement is to develop and demonstrate an on-line thermal barrier coating (TBC) monitor for critical engine components, row 1 turbine blades and vanes. This on-line TBC monitor represents an important advancement toward achieving the program goals of improved reliability availability and maintainability (RAM) of existing and advanced gas turbine power plants by continuously monitoring the health of critical thermal barrier coated parts allowing plant owners to operate the units longer than conservative inspection requirements would allow. This project will evaluate the performance of innovative thermal barrier coating systems for applications at high temperatures in advanced industrial gas turbines. In the development process, the work will initially focus on the "F" and "G" class Advanced Gas Turbines (AGT). When the technology has been successfully implemented on these designs, the use will be extended to ATS and NGT class gas AGTs that will be operated at even higher temperatures. All gas turbine engines using TBC coated components will eventually benefit from this on-line monitoring technology. The detailed project goals and plans are further described in response to question 2 of Siemens' waiver petition.<sup>1</sup> This waiver is for inventions of Siemens only. If Siemens enters into any subcontracts with entities where the patent rights disposition is governed by 42 USC § 2182 or 42 USC § 5908, and Siemens desires to obtain title in any subcontractor inventions, such entities must agree, in writing to DOE patent counsel, to application of this waiver to such inventions.

The total estimated cost of the cooperative agreement is \$5,118,807, with the DOE share being \$3,839,204, or 75%, while the remaining cost share of 25%, or \$1,279,603, will be provided by Siemens. The period of performance is from October 2001 through September 2005.

In its response to question 4 of the attached waiver petition, Siemens has described its technical competence in the field of high performance gas turbine generators. Siemens has been actively advancing blade and vane development for 30 years and continues to be committed to bringing advanced power concepts to the turbine market. Siemens has recognized and identified the need for an on-line thermal barrier coating monitoring that will significantly improve plant reliability and availability by extending the life of critical components. Advances at Siemens in sensor and computer technology in the past decade have enabled the expectation of an improvement in artificial intelligence (AI) based supervisory systems for immediate action requests or to numerical thermal barrier coating remaining life prediction model. Indicative of Siemens' advancement of gas turbine technology is an extensive patent portfolio. A representative listing of Siemens', as well as Westinghouse's, United States patents relevant to gas turbine systems and components, are attachments 1 and 2 to the waiver petition.

In its response to question 9 of the attached waiver petition, Siemens states that it competes in the global marketplace with other global companies that have the potential to develop thermal barrier coating technologies. General Electric, Alstom, and MHI all produce gas turbines with similar components. Siemens expects General Electric and others to develop similar technologies in response to Siemens' development of on-line monitoring applications.

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<sup>1</sup> This cooperative agreement is not under the Advanced Turbine Systems program, and is therefore not subject to previously negotiated terms and conditions with the petitioner regarding adequate recognition and U.S. Competitiveness.

Further, the inventions for which this waiver is sought are applicable to but a component part of a subject area that is only a portion of the global power plant market. Siemens states that grant of the waiver will not place it in a preferred position in this field; rather, it will allow Siemens to remain competitive in a global marketplace. Therefore grant of the waiver will have a positive effect on competition and market concentration.

The subject cooperative agreement will be modified to add the Patent Rights--Waiver clause in conformance with 10 CFR 784.12, wherein Siemens has agreed to the provisions of 35 U.S.C cc 202, 203, and 204. This waiver clause will also include a paragraph entitled U.S. Competitiveness, in which Siemens agrees to substantial U. S. manufacture of subject inventions (attached hereto). Additionally, Siemens agrees not to transfer subject inventions to any other entity unless that other entity agrees to these same requirements. The petitioner has further agreed to modification of the data clause of the subject cooperative agreement (48 C.F.R. 952.227-14) by adding paragraph (k), Alternative VI, concerning contractor licensing of data

Considering the foregoing, it is believed that granting the waiver will provide the Petitioner with the necessary incentive to invest resources in the commercialization of the results of the agreement in a fashion which will make the agreement's benefits available to the public in the shortest practicable time. In addition, it would appear that grant of the above requested waiver would not result in an adverse effect on competition nor result in excessive market concentration. Therefore, in view of the objectives and considerations set forth in 10 CFR 784, all of which have been considered, it is recommended that the requested waiver, as set forth above, be granted.

[REDACTED]  
Mark P. Dvorscak  
Assistant Chief Counsel  
Intellectual Property Law Division

Date: Sept 11, 2003

Based on the foregoing Statement of Considerations and the representations in the attached waiver petition, it is determined that the United States and the general public will best be served by a waiver of rights of the scope described above, and therefore the waiver is granted. This waiver shall not apply to any modification or extension of this agreement, where through such modification or extension, the purpose, scope, or cost of the agreement is substantially altered.

CONCURRENCE

[REDACTED]  
George Rudins  
Deputy Assistant Secretary  
Office of Fossil Energy  
Coal and Power Systems

APPROVAL

[REDACTED]  
Paul A. Gottlieb  
Assistant General Counsel  
for Technology Transfer and  
Intellectual Property

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**(1) U. S. COMPETITIVENESS**

The Contractor agrees that any products embodying any waived invention or produced through the use of any waived invention will be manufactured substantially in the United States unless the Contractor can show to the satisfaction of the DOE that it is not commercially feasible to do so. In the event the DOE agrees to foreign manufacture, there will be a requirement that the Government's support of the technology be recognized in some appropriate manner, e.g., recoupment of the Government's investment, etc. The Contractor agrees that it will not license, assign or otherwise transfer any waived invention to any entity unless that entity agrees to these same requirements. Should the Contractor or other such entity receiving rights in the invention undergo a change in ownership amounting to a controlling interest, then the waiver, assignment, license, or other transfer of rights in the waived invention is suspended until approved in writing by the DOE.